***Draft #1: Introduction and Definitions***

You will write a three paragraph introduction and define your variables using the guidelines below **and** the first part of the ***Project Writing Guide (pages 1-4).*** The test of a good introduction: I could give your intro to anyone in the class and they would know how to carry out your investigation without asking you any questions.

**Before** you write your introduction, carefully think ahead about how you will be carrying out this project including the mathematics you will use. Your final introduction can be fixed up after you have finished your data collection and analysis as long as it is based firmly on the documented plan you made at the outset. Make sure your introduction reads well, is concise, is logical, and does not contain “fluff” yet tells the reader clearly what will happen in the rest of your project. The introduction must be word processed. Always use appropriate and accurate math terminology. There is a soft 2000 word limit on the entire project. Longer is not better!

Things to include in this Draft #1:

**Header** (You do not need a separate title page yet.)

**1** Full Name, Period

2 “IB Math Studies SL - May 2018” (if taking the IB exam this year or 2019 if next year.)

3 A project title (Hopefully somewhat interesting. “Math Project” is not an acceptable title*.*) Avoid titles that are overly descriptive which will be limiting as you investigate. *(See the Writing Guide on this)*

4 Write "**Draft #1 - Introduction and Definitions"**

**Paragraph 1 Statement of Task.** Describe the overall purpose of your project. Make it brief. Use friendly, non-technical terms so we have an idea of what the project is about. The average person on the street should be able to understand what you will try to do. *Don't bombard the reader with a mass of mathematical terms in this first paragraph.*

There is a bit of a paradox when your title is “Is there a correlation between \_\_\_\_\_\_\_ and \_\_\_\_\_?” A title like this is very limiting as anything else other than correlation is irrelevant which means you have eliminated 95% of the mathematical and statistical math processes you have available. Using the word “relationship”, “association” or phrases such as “investigate the possible influences on street crime” might open up other options for you.

**Paragraph 2 Data Description.** This should be an initial brief description about what data you will collect (arm lengths, crime rates, heights of players, positions, gender, number of cancer deaths, etc…). If it is secondary type data, then provide the source and be specific. (website or source name and address). If you are collecting your own primary data, then you should briefly explain how you will do this. (If it’s primary, then you must include a copy of the survey you plan to use when you turn in Draft #1). Remember to write in future tense. Be specific and clear so there is no doubt about the variables of your project.

**Paragraph 3 The Plan**. This is the “HOW” part of the introduction. Lay out a detailed plan of what you intend or anticipate doing with your information. Your plan should be in an order that makes logical sense*.*  Instead of a paragraph I strongly recommend that you create a numbered (or bullet point) list for each math process. Order is important. For each bullet point, include a single math process you will do and explain the rationale for using the process. You do not need to be highly detailed about each technique, but you do need to name the math process and explain its purpose or relevance as it relates to your task. If appropriate, specify the portion of your data that you would use for that math process.

The following are sample statements from a variety of projects to get you thinking:

*I will use the median sprint times over the season to create a box plot for each of the three teams. I will use the box plots to see which teams tend to have the fastest and most consistent times.*

*I will calculate the median average heights of 12 year old boys and compare them to heights of 13, 14, and 15 year old boys to see the rate at which they are getting taller. I will then repeat the process for girls.*

*I will create a scatter plot to visually assess the correlation between the weight of my rocks against the cost of the shipments. The weight of the rocks will be the independent variable.*

*I will perform the Chi-Square Test of Independence to determine if the type of car and the type of bumper sticker is associated.*

*I will create a Normal Distribution Curve for the amount of time it took each person to accomplish the task. This will allow me to calculate the probability of a random person taking less than 3 seconds.*

\* The first three paragraphs should be written in future tense.

**Definitions** Explicitly define your variables. What do the *numbers* or the data you are collecting represent specifically? This list should include everything you mentioned in paragraph 2 above. (ie: literacy rates, free throw %, 10K race times, batting average, etc…). Remember that someone in another country might be evaluating your project and may not be familiar with your topic. Define the *number/data* in terms of *your* project, don’t just write the dictionary definition. If a number has a unit be sure to include it.

*Examples Crime rate: The number of crimes in the state for every 1000 people in that state.*

*Throwing distance: The distance, in feet and inches, that the ball travels. Later in the*

*project, I will covert to a singular unit of inches.*

*Happiness Index: A value as determined by the happiness scale I have created. See the*

*survey.*

**About Math Processes:**

You will want to include at least 2 *simple math processes* in the project minimum as well as at least one *further process*. Additional simple or further math processes, if truly useful, may give you a richer project and a higher score.

Don’t include any mathematical process unless it is fully relevant. When deciding to use a math technique, ask yourself: *Is it appropriate? Once I finish the math process, will I be able to interpret the result in a meaningful way as it relates to what I said in my introduction* ?

It makes sense to start out with simple math processes that lead to further processes. Do what is most logical, however.

**About Surveys:** If you are creating a survey to be distributed, your well thought out rough draft is to be submitted with your introduction. Don't pass out your survey or collect data until you get my feedback. Think ahead of what steps you can take to get a reasonable, random sample of unbiased data.

**Your Score:** for "Draft #1 - Introduction and Definitions"

Worth about the same as a quiz, the score will be based on three things:

1. Your project has been thoroughly planned and well thought out.
2. You followed the details of Packet P3, this assignment instruction guide and the IA Project Writing Guide (pages 1-4).
3. You met the deadline: Monday, October 30.

**Turn-In "Draft 1 - Introduction and Definitions"**

You will submit a copy via Turn-it.com and submit a paper copy. Code is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* I can only give a limited number of projects my attention each night. Therefore, I provide feedback in the order I receive them. The earlier you turn it in, the quicker I can return it to you and the more time you will have to do the next phase of the project. There are 48 of you so don't expect immediate turnarounds!